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Homemakers' Food and Nutrition Knowledge-- Implications for Nutrition Education //

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Recommendations for food choices are based on findings from research on human requirement for nutrients, food composition, and food consumption. For some time we have recognized that we also need to know something about why people choose foods as they do. To understand why the main family selectors choose as they do and to develop appropriate guidance materials, we need to know something of what they know about foods and nutrition as well as their attitudes and opinions on various aspects of feeding families.

In 1943 the Committee on Food Habits of the National Research Council noted a gap between what was known about nutrition and what was practiced.

In 1969 the White House Conference on Food, Nutrition and Health also emphasized the need for more detailed information on what homemakers know about nutrition and what effect, if any, this knowledge has on actual practice.

To obtain information on the knowledge and practices of homemakers, a study was designed by the *Consumer and Food Economics Institute, ARS, USDA*, and was contracted to Crossley Surveys, Inc., in 1970 to interview homemakers.¹ The purpose of the study was (1) to describe the knowledge of food and nutrition of homemakers; (2) to describe the knowledge of food practices in the households; and (3) to describe the homemakers' opinions regarding selected family food practices.

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Sample

A probability sample of all private households in the United States, excluding Alaska and Hawaii, was used. A private household was one where cooking facilities were available. A multistatified area probability design was used to draw the sample. For this survey 600 segments were selected, and within each sample segment six households were predesignated for interview, providing 3,600 households. No deviation from the specified procedures was permitted.

In attempting to obtain a maximum of completed interviews, a minimum of four call-backs were made. No substitutions were permitted for sample households that did not yield interviews.

Interview

The respondent within each sample household was the person with major responsibility for decision on what food items were used in the household. There were 2,545 completed interviews, 70 percent of the 3,600 sample households. The 2,545 households included 7,463 individuals, 5 years of age and older.

Schedule

The interview schedule was pretested in three cities in two sections of the country and in urban and rural areas to insure both its completeness and workability in the field. Included were questions to determine the respondent's knowledge of foods and nutrition, their opinions regarding selected practices of the household members, the food consumed by each member of the household on one weekday and on one day of the weekend (half of the

respondents reported on foods consumed on Saturday and half on foods consumed on Sunday), the frequency with which various categories of foods were served to the family, the number of persons in the family, and certain demographic information.

To assist the interviewer and the respondent, cards containing the response format to certain questions and the actual statements of selected questions were given to the person being interviewed. The use of these cards was believed to increase the accuracy of the response and to decrease the time spent in repeating the question or the possible responses. The average length of each interview was 60 minutes and was held in the home of the respondent.

Food and Nutrition Knowledge

Individuals responsible for making household food decisions were asked to respond to 18 statements designed to measure awareness of general nutrition facts as well as specified knowledge about the selection, handling, and preparation of food. As shown in the data below, only 3 percent responded correctly to all 18 statements. However, almost 90 percent answered at least two-thirds of the statements correctly. The mean number of correct responses was 14.5.

Distribution of individual aggregate scores:

Total score	Respondents answering correctly
	<i>Percent</i>
18	3
17	9
16	16
15	18
14	18
13	14
12	10
Less than 12	12

A closer inspection of individual statement scores revealed that high individual totals were based largely on a homemaker's knowledge of handling or storing foods to maintain nutritional value and quality and not on knowledge related to the nutrient content of food and differing nutrient needs of people depending on age and sex. Of the five statements to which more than 90 percent of homemakers responded correctly, four related to the storage and handling of food.

Many homemakers held the mistaken belief that some foods by themselves have all the nutrients in the recommended amounts, or they were not aware that most

nutrients work best in combination with other nutrients. Other low scores indicated that many homemakers were not aware that food is the only source of energy or that snacking can effectively upgrade a family's diet.

Application of Food and Nutrition Knowledge

Another dimension of food and nutrition knowledge was measured when the respondents were shown five daily food plans and asked their opinions of each day's plan in terms of its being nutritionally desirable or not and their reasons for these opinions. A day's food plan was considered to be nutritionally desirable if it contained at least the minimum number of servings of food from each of the four basic food groups recommended in the *Department's* "Food for Fitness—A Daily Food Guide." Each day's food plan contained some foods from each of the four basic food groups, namely vegetable-fruit, meat, milk, and bread-cereal. However, two of the plans, B and D, were short in the number of food servings. Food plan B was short in three of the four basic food groups; the meat group was the exception. Food plan D was short in both the bread-cereal and vegetable-fruit groups. Bread and cereals that are whole grained, enriched, or restored are the foods included in the bread-cereal group. Today there is greater enrichment of bread-cereal products, including crackers, rolls, and Italian bread, than when the data were collected. Thus food plan B and D might not be considered short in food servings from the bread-cereal groups if they were evaluated now.

Most respondents, 97 percent, were willing to express an opinion on each day's food plan. This could be interpreted as a measure of confidence in their ability to recognize a nutritionally desirable diet. The percent of respondents correctly identifying the nutritional desirability of each day's food plan was:

Food Plan	Respondents
	<i>Percent</i>
A	66
B	47
C	71
D	16
E	69

Plan D was more likely to be considered nutritionally desirable than any of the other four plans, but it was identified correctly by only 16 percent of the respondents. It included steak, baked potato, and salad in the evening meal, but for the day was short in the number of servings from two food groups. Food plan B contained insufficient number of servings from three of the four basic food groups and was correctly identified by almost one-half of the respondents. Food plans A, C, and E each contained both

the kinds and at least the minimum number of food servings recommended for a day and were correctly recognized by about two-thirds of the respondents.

For each day's food plan at least 50 percent of the people said it was nutritionally desirable. This would suggest either that the presence of one or more food types, rather than number of servings, affected respondents' evaluations or that evaluations were based more on individual meals rather than the total day's food plan.

The reasons given for considering a day's food plan to be nutritionally desirable indicated that respondents thought in terms of kinds of food recommended for a nutritionally desirable diet rather than of a good assortment of foods in desirable amounts. The presence of either the meat or the vegetable-fruit group apparently had a disproportionately high effect on a favorable response. For each day's food plan approximately one-sixth of the respondents who considered the plan to be nutritionally desirable did not, or could not, give any reason for their opinions.

When asked why a day's food plan was not nutritionally desirable, respondents generally mentioned a shortage in amounts of food. They were more likely to comment on vegetables and fruits than any other food group for all five food plans. Another reason mentioned by many people was that the day's food plans included too many carbohydrates, starches, and sweets. Of the people who considered that plan B was not nutritionally desirable, approximately 60 percent said the day's food plan contained too many carbohydrates, starches, and sweets. Those not giving reasons for why they considered the day's food plans to be nutritionally undesirable ranged from 10 percent for plan B to 27 percent for plan A.

Family Food Practices

Based on information from the respondents on foods eaten on one weekday and one weekend day by family members, the total day's food intake on a weekday of over 60 percent of all household members, 5 years of age and older, included one or more servings of food from each of the four basic food groups. Data on actual amounts of foods consumed by each household member were not obtained, but the number of servings of each food consumed by each household member was obtained. Over 90 percent of this population had foods from at least three of the four basic food groups. The total day's food intake of almost everyone, 97 percent, included food from at least two of the four basic food groups. The incidence of having a full assortment of foods would have been much larger had it not been for the more than 20 percent of household members missing milk or milk products from their weekday food intake.

Weekend eating habits were similar to those of weekdays in groups of food consumed. Approximately 60 percent of

all household members consumed one or more foods from each of the four basic food groups.

Calculations based on food groups from meals only on a weekday reveal that 55 percent of all individuals had diets containing a full assortment of foods. An additional 36 percent of household members had diets containing foods from three groups, 27 percent of whom missed the milk group.

On weekends the food intake from meals only was similar to weekdays. Slightly more than 50 percent of the people consumed a full assortment of foods, and 37 percent had diets containing foods from three of the four basic food groups. Thirty percent of all persons missed the milk group.

Between-Meal Eating on Weekdays and Weekends

More than two-thirds of all individuals ate or drank something between meals on both weekdays and weekends. Between-meal eating or snacking during weekdays contributed considerably to having a variety of foods from the four basic food groups, a difference from 55 to 62 percent. Of particular importance was the increased milk consumption from weekday between-meal eating. Increases for the other food groups were smaller.

Proportion of household members eating foods from all four basic food groups on a weekend day was raised from 52 to 59 percent by between-meal eating. The contribution of between-meal eating to particular food groups was similar to that made on weekdays; milk consumption again showed the largest net increase among the four basic food groups.

Opinion on Family Members Choice of Food

In response to the question "Is anyone in this household not eating all the kinds of food you think he or she should have?", 85 percent of the respondents believed that everyone in their families was eating all the kinds of food he should. Only 15 percent indicated that all or some members were missing some foods needed for a nutritionally desirable diet. Everyone expressed a definite opinion.

The respondents were then asked which family members were not eating all the kinds of food they should have and what foods were missing from their diets. Respondents said 93 percent of the household members were missing no foods. The foods reported as missing from diets of the remaining 7 percent of household members were fruits and vegetables, 5 percent; milk and milk products, 1 percent; meat and meat alternates, 1 percent. Although respondents said only 1 percent of the individuals were missing milk or milk products in their diet, reports of foods eaten showed that 30 percent of all individuals, 5 years of age and older, were missing milk or milk products from their day's intake on the 2 days recorded.

Approximately one-half of those aware of household members not eating a variety of foods are taking no action. The remaining respondents either attempted to substitute other foods or encouraged the family member to eat.

Respondents were also asked whether they thought all those members who were eating a variety of foods were eating enough servings of them. Almost 90 percent of all respondents believed that all household members were eating enough servings of a variety of foods. Fruits and vegetables, rather than milk, were most frequently identified as the foods being eaten in too small a quantity.

More respondents attempted to substitute servings of another food or to encourage household members to eat more servings of a food than tried to encourage them to eat a food initially.

Respondents were asked what they thought of household members' between-meal eating. In total, two-fifths considered between-meal eating favorably, one-fifth unfavorably, and two-fifths expressed no concern one way or the other.

Source of Nutrition Information

In response to the question "Where did you learn about nutrition?", over 40 percent of the respondents learned about nutrition in high school. Almost 30 percent of the respondents learned from newspapers or magazines, and 25 percent learned from mothers or grandmothers about nutrition.

Interest in Nutrition Information

All respondents were asked whether they were interested in having more information about nutrition. Slightly less than 40 percent expressed a definite interest in having more information about nutrition, 30 percent would require some motivation for wanting nutrition information, and the remaining 30 percent said they were not interested and thus would require a strong rationale.

Implications for Nutrition Education

Homemakers have a fair knowledge of food and nutrition facts, but they have a very limited facility in using these facts to select meals and snacks for a desirable daily food intake. With the way people live and work today, homemakers need to think in terms of the day's total food intake, which they do not seem to do. Nutrition education is needed to help homemakers gain the needed facility in selecting foods for the home from the foods their families will eat in order to provide at least a desirable nutritional foundation. Then the foods or meals eaten away from home become an integral part of the day's food intake.

Most homemakers seem to believe that all family members are eating well; that they are getting a good assortment of foods in desirable amounts. A comparison was made of those homemakers who considered that their family members were eating well and those who recognized that some family members were not eating as they should. This comparison showed little difference in quality of choices made. A little more than one-half of all family members from both groups were making desirable choices during the day. However, the belief that all is well makes nutrition education unnecessary in the minds of many homemakers.

There is not a universal demand for more information on nutrition. Slightly more than one-third of those surveyed did report they wanted more information. However, whether they would take the time and make the effort to attend meetings for this purpose or even to read printed material on the subject is not known. On the other hand, about one-third said they were not interested in more information. Thus, nutritionists face great challenges in developing and conducting nutrition education programs. Every tool possible must be used to motivate behavioral change, since this is our primary objective rather than doling out information that may or may not be welcome.

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